Amendments to the Claims:

This listing of the claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently Amended) A method for performing an alignment ~~self~~ check of a wavelength meter that analyzes an interference pattern created by a reference signal with a known wavelength and a source signal with an unknown wavelength, the reference signal traveling in a reference signal path and the source signal traveling in a source signal path, the method comprising:

(a) placing ~~a~~ the reference signal into the a reference signal path of the wavelength meter;

(b) ~~placing~~ replacing the source signal with the reference signal so that the reference signal is placed into ~~an~~ the ~~unknown~~ source signal path of the wavelength meter; and,

(c) detecting whether after traveling through the ~~unknown~~ source signal path, the reference signal has a same period as after traveling through the reference signal path.

2. (Currently Amended) A method as in claim 1 wherein (c) includes:

sampling values of the reference signal after traveling through the ~~unknown~~ source signal path, based on frequency of the reference signal after

traveling through the reference signal path to determine whether the sampled values are at constant amplitude.

3. (Currently Amended) A method as in claim 1 additionally comprising:

(d) notifying a user of the wavelength meter when after traveling through the ~~unknown~~source signal path, the reference signal has a different period than after traveling through the reference signal path.

4. (Currently Amended) A method as in claim 1 additionally comprising:

(d) performing realignment of the wavelength meter when after traveling through the ~~unknown~~source signal path, the reference signal has a different period than after traveling through the reference signal path.

5. (Original) A method as in claim 1 wherein the wavelength meter includes a Michelson interferometer.

6. (Currently Amended) A method as in claim 1 additionally comprising:

translating a mirror in both the ~~unknown~~source signal path and in the reference signal path while detecting whether after traveling through the ~~unknown~~source signal path, the reference signal has the same period as after traveling through the reference signal path.

7. (Currently Amended) A wavelength meter comprising:

a reference signal path;

a~~n~~a ~~unknowns~~ource signal path;

a detector that detects signal activity on the reference signal path and signal activity on the ~~unknown~~source signal path;

a signal source that places a source signal with an unknown wavelength on the source signal path;

a reference source that places a reference signal with a known wavelength on the reference signal path, wherein the reference source is able to also place the reference signal on the source signal path in order to perform an alignment check of the wavelength meter; and,

an analyzer that determines whether, after traveling through the ~~unknown~~source signal path, a the reference signal has a same period as after traveling through the reference signal path.

8. (Currently Amended) A wavelength meter as in claim 7 wherein the analyzer checks values of the reference signal sampled by the detector after traveling through the ~~unknown~~source signal path, based on frequency of the reference signal after traveling through the reference signal path, to determine whether the sampled values are at constant amplitude.

9. (Currently Amended) A wavelength meter as in claim 7 wherein the wavelength meter notifies a user of the wavelength meter when after traveling

through the ~~unknown~~source signal path, the reference signal has a different period than after traveling through the reference signal path.

10. (Currently Amended) A wavelength meter as in claim 7 wherein the wavelength meter performs realignment of the wavelength meter when after traveling through the ~~unknown~~source signal path, the reference signal has a different period than after traveling through the reference signal path.

11. (Original) A wavelength meter as in claim 7 wherein the wavelength meter includes a Michelson interferometer.

12. (Original) A wavelength meter as in claim 7 wherein the analyzer checks values of the reference signal sampled by the detector to determine whether the sampled values are at constant amplitude.

13. (Currently Amended) A wavelength meter as in claim 7 wherein the wavelength meter includes a mirror that is translated while the detector detects signal activity on the reference signal path and signal activity on the ~~unknown~~source signal path.

14. (Currently Amended) A wavelength meter comprising:
    reference signal path means for guiding a signal;
    ~~unknown~~source signal path means for guiding a signal;

detector means for detecting signal activity on the reference signal path means and signal activity on the ~~unknown~~source signal path means;

    means for placing a source signal with an unknown wavelength on the source signal path means;

    means for placing a reference signal with a known wavelength on the reference signal path means and for placing the reference signal on the source signal path means in order to perform an alignment check of the wavelength meter; and,

analyzer means for determining whether, after traveling through the ~~unknown~~source signal path means, a reference signal has a same period as after traveling through the reference signal path means.

15. (Currently Amended) A wavelength meter as in claim 14 wherein the analyzer means checks values of the reference signal sampled by the detector means after traveling through the ~~unknown~~source signal path means, based on frequency of the reference signal after traveling through the reference signal path means, to determine whether the sampled values are at constant amplitude.

16. (Currently Amended) A wavelength meter as in claim 14 wherein the wavelength meter notifies a user of the wavelength meter when after traveling through the ~~unknown~~source signal path means, the reference signal has a different period than after traveling through the reference signal path means.

17. (Currently Amended) A wavelength meter as in claim 14 wherein the wavelength meter performs realignment of the wavelength meter when after traveling through the ~~unknown~~source signal path means, the reference signal has a different period than after traveling through the reference signal path means.

18. (Currently Amended) A wavelength meter as in claim 14 wherein the wavelength meter includes a Michelson interferometer.

19. (Original) A wavelength meter as in claim 14 wherein the analyzer means is also for checking values of the reference signal sampled by the detector means to determine whether the sampled values are at constant amplitude.

20. (Currently Amended) A wavelength meter as in claim 14 wherein the wavelength meter includes a mirror that is translated while the detector means detects signal activity on the reference signal path means and signal activity on the ~~unknown~~source signal path means.